M3093DE/DG Image Scanner
Cleaning and Maintenance

FUJITSU

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This digital apparatus does not exceed the Class A limit for radio noise emissions from digital apparatus set out in the Radio interference Regulations of the Canadian Department of Communications.

Le pésent appareil numérique n'ément pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescridtes dans le Réglesment sur le brouillage radioélectrique dicté par le ministere des Communications du Canada.

MaschinenlärmInformationsverordnung 3. GSGV, 18.01.1991:Der arbeisplatzbezogene Schalldruckpegel beträgt 70dB(A)oder weniger gemäß ISO 7779.

The contents of this manual may be revised without prior notice.

Please send your comments on this manual or on Fujitsu products to the following addresses:

IMPORTANT NOTE TO USERS

READ CAREFULLY ALL OF THIS MANUAL BEFORE USING THIS PRODUCT. IF NOT USED CORRECTLY, UNEXPECTED DAMAGES MAY BE CAUSED TO THE USERS OR THE BYSTANDERS.

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Preface

This manual explains how to clean and maintain the M3093DE/DG image scanner.

The M3093DE/DG is highly functional image scanner developed for volume filing, using charge-coupled device (CCD) image sensors. This scanner features duplex scanning and high quality image, processing with an automatic document feeder (ADF).

Refer to Operator's Guide for basic information about the M3093DE/DG.

Conventions

Special information, such as warnings, cautions are indicated as follows:

WARNING
WARNING indicates that personal injury may result if you do not follow a procedure correctly.

CAUTION
CAUTION indicates that damage to the scanner may result if you do not follow a procedure correctly.

The following symbols are used in this manual.

Used for general WARNING and CAUTION.

Be careful not to pinch your fingers or hands.

CONTENTS

1

DESCRIPTION

This chapter describes units, assemblies, indicators and LED functions.

Units

Assemblies

Indicators

Units

① ADF ② ADF lever ③ ADF paper chute
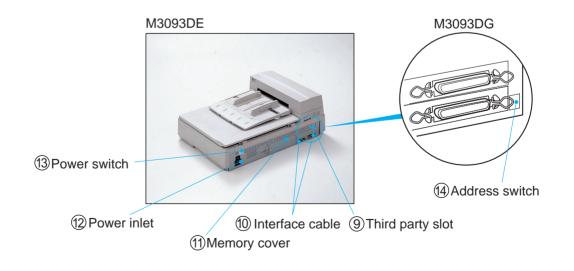
⑥ Document cover ⑦ Document holding pad

⑤ Stacker ④ Indicators

⑧ Document bed

M3093DE

M3093DG

⑬ Power switch

⑭ Address switch

⑫ Power inlet ⑩ Interface cable ⑨ Third party slot

⑪ Memory cover
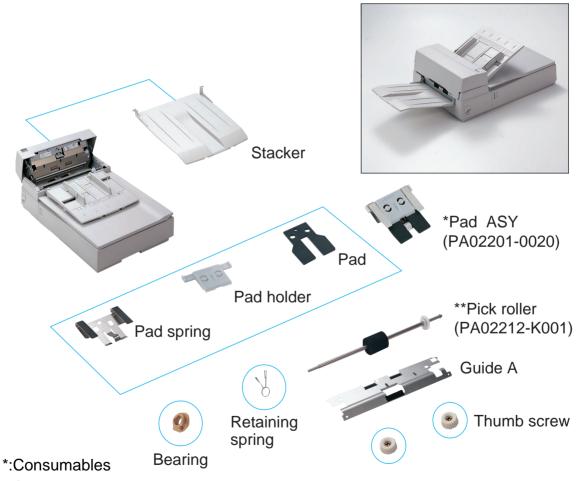
No.	Function
①	Automatically feeds documents to the reading position.
②	Opens/closes ADF to remove the jammed documents.
③	Holds the documents to be fed by ADF.
④	Indicate the status of the scanner.
⑤	Stacks the read documents.
⑥	Covers a document to be read.
⑦	Presses a document to the document bed.
⑧	A document to be read is placed. Also called Flatbed. (FB)
⑨	Third party slot (M3093DE)
⑩	Connected to the host system with interface cables.
⑪	Open here when installing or replacing Memory option.
⑫	Connect the power cable from an AC power outlet here.
⑬	Power switch.
⑭	Used for setting SCSI-ID. (M3093DG)

Assemblies

Stacker

*Pad ASY
(PA02201-0020)

Pad

Pad holder

**Pick roller
(PA02212-K001)

Pad spring

Guide A

Retaining
spring

Bearing

Thumb screw
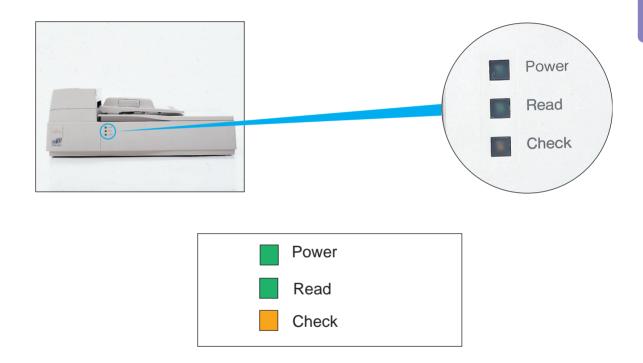
*:Consumables

**:Consumables

These parts may not be provided in some countries because they are not compliant with safety regulations. Before ordering the pick roller, contact your sales agent or Fujitsu service representative.

Indicators

■	Power
■	Read
■	Check

LED functions

LED	Function
■ Power	Lights to indicate the power is on.
■ Read	Lights to indicate scanning is in progress.
■ Check	Lights if a device error occurs that may result in a service call.
	Blinks if a document is jammed in the ADF. Turns off when the jammed documents are removed from the ADF and ADF is closed. Blinks at four seconds intervals if the ADF cleaning is necessary.

OPERATING INSTRUCTION

This chapter describes how to load document on the ADF and flatbed, how to load document larger than the document board and how to read a page from a thick book.

Loading Document on the ADF

Loading Document on the Flatbed

Loading Document Larger than the Document Board

Reading a Page from a Thick Book
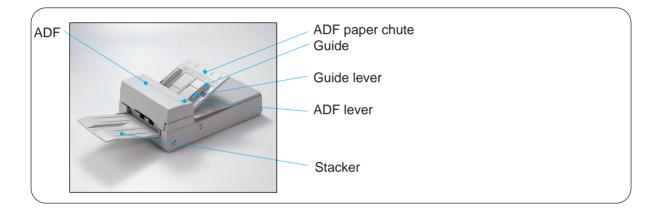
Loading Document on the ADF

> ⚠️ **CAUTION**
>
> Be sure to change the position of the carrier fixing bracket according to "INSTALLATION AND CONNEC-TION" in OPERATOR'S GUIDE before operation. This may prevent the scanner from being damaged.
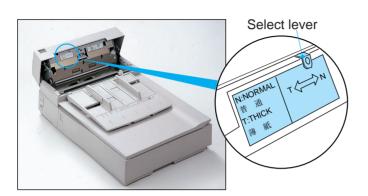
ADF

ADF paper chute

Guide

Guide lever

ADF lever

Stacker

1 Lift up the ADF lever to open the ADF.

UP

Select lever

2 Set the paper select lever as follows.

Paper	Mode
Plain paper	NORMAL
Heavy paper	THICK

N O T E
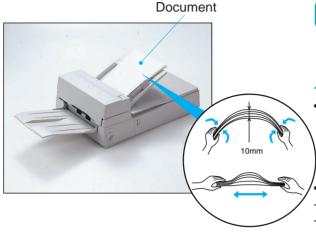
Be sure to reset the paper select lever to "NORMAL" when you load the paper other than the heavy paper.

. . . .

ADF paper chute

3 Close the ADF.

4 Pull up the ADF paper chute until it clicks.

Document
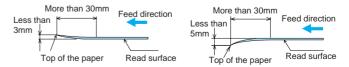
5 Fan the sheets before setting the document on the ADF paper chute.

NOTE

- Remove paper clips and staples. Flatten the staple holes .

- Read the following documents using the flatbed.
- Paper with a clip or staple.
- Paper that has ink which is not dry.
- Paper thickness is not constant, such as an envelope.
- Paper that has large rumples or curl.
- Paper that has folds or tears.
- Tracing paper.
- Coating paper.
- Carbon paper.
- Paper that is smaller than A6 size or larger than A4 width.
- Items other than paper, such as clothes, metal sheet, or OHP film.
- Photographic paper.
- Paper that has perforations on its side.
- Paper that has a shape other than square.
- Paper that is very thin.

- Set the paper so that the top of it is curled as shown below.

- Do not mix different width documents.

6 Angle the document edges as follows:

- Place the documents face down with the top to the left as shown in A. The long side is the top for landscape mode and the short side is the top for portrait mode.
- Lift the documents holding the both ends with both hands.
- Hold the documents tightly with your left hand and bend the documents as shown in B.
- Grip tightly with your right hand, loosen the grip of your left hand, and straighten the documents as shown in C.
- Repeat these operations until the top is angled 20° or less as shown in D.

A
Top

A B C

(For portrait mode)

B

C

D

20° or Less

7 Set the guides so that there is a little amount of clearance between the side edges and the guides. Load the document face down on the ADF paper chute and adjust the guides to the document size.

◿ NOTE

- Squeeze the guide lever to free the guides.
- Load documents so that the thickness is less than 4mm.
- Set the guides so that they touch the document sides.

Documents

Guide

Guide lever
(Both sides)

max 4mm
(0.16")

8 After the read command is issued from the host system, scanned documents are stacked in the stacker for removal.
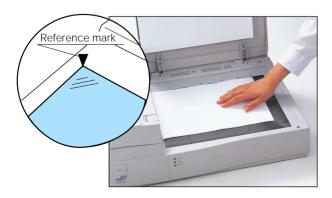
> ⚠️ **WARNING**
> Do not look directly at the light source during read operation.

Loading Document on the Flatbed

Document cover
Document holding pad

Document bed

1 Open the document cover.

Reference mark
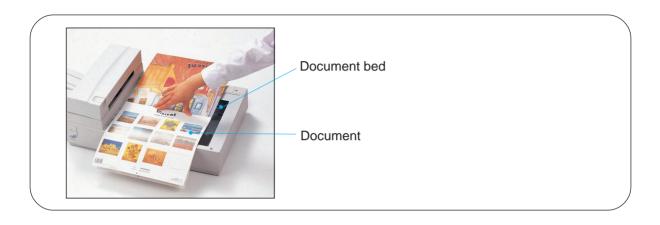
2 Place the document face-down and align the top left of it with the reference mark.

3 Close the document cover slowly.
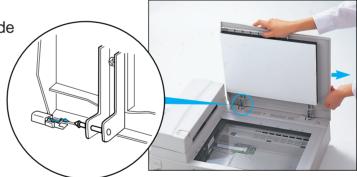
4 Issue the read command from the host system.

● 2-7

⚠ WARNING

Do not look directly at the light source during read operation.

Loading Document Larger than the Document Board

Document bed

Document

1 Open the document cover approx. 80 degrees and slide the cover in the direction of the arrow to remove it.

2 Place the document face-down on the document bed.
Issue the read command from the host system.

3 After the read operation, remove the document, re-attach the document cover and close the document cover.

Reading a Page from a Thick Book

Thick book

1 Open the document cover.

2 Place the book face-down on the document bed.

3 Issue the read command from the host system.
Keep the cover open for reading.

N O T E
Do not move the book during read operation.

CLEANING
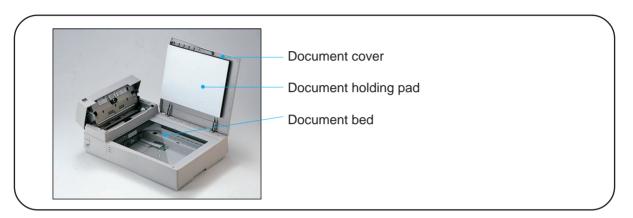
This chapter describes the cleaning supplies and area, and how to clean the ADF and flatbed.

Cleaning Supplies and Cleaning Area

Cleaning the ADF

Cleaning the Flatbed

Cleaning Supplies and Cleaning Area

Document cover
Document holding pad
Document bed

Supplies

Supplies		Type No.	Frequencies (*1)	Remarks
Cleaning paper		Contact your dealer or distributer	Every 5,000 sheets	
Cleaner F2			• Plastic rollers (*2)	1 bottle Apply Cleaner F2 to cotton swab.
Cleaner F1 or Isopropyl alcohol			• PAD ASY Every 5,000 sheets • Pick roller/Feed rollers/ Glass/Sheet guide Every 5,000 sheets	1 bottle. Apply Cleaner F1 to cloth.
Cotton swab				
Dry cloth				

*1 When the CHECK indicator starts blinking at 4-second intervals, clean the scanner regardless of the frequencies.

*2 Clean the plastic rollers when they are soiled with dirt. Do not clean the rubber rollers with cleaner F2.
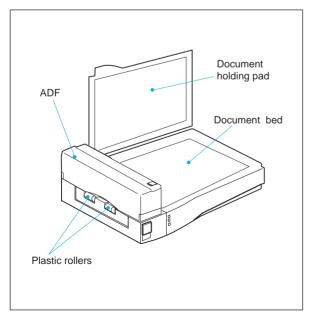
NOTE
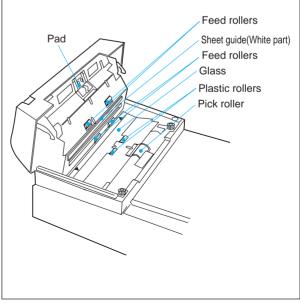
When the following paper is used, it may be necessary to clean more frequently.
• Paper with smooth surface such as coated paper.
• Paper with almost all printed area.
• Paper with special coating such as carbon-less paper.

Cleaning area
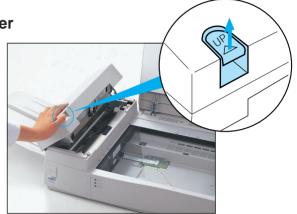
Area	Name	Cleaning paper with Cleaner F1	Dry cloth with Cleaner F1	Cotton swab with Cleaner F1 or F2
Flatbed	Document holding pad		◯	
	Document bed		◯	
ADF	Pad	◯	◯	
	Glass/Sheet guide	◯	◯	
	Pick roller	◯	◯	
	Plastic rollers	◯	◯	◯
	Feed rollers	◯	◯	

ADF

Document holding pad

Document bed

Plastic rollers

Pad

Feed rollers

Sheet guide(White part)

Feed rollers

Glass

Plastic rollers

Pick roller
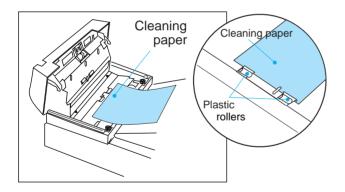
Cleaning the ADF
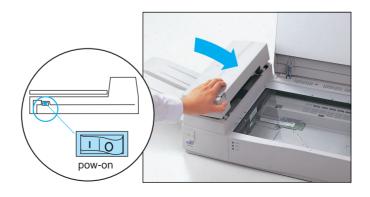
Cleaning the ADF with cleaning paper

1 Lift up the ADF lever to open the ADF.

2 Apply cleaner F1 to a new cleaning paper.

3 Place the cleaning paper on the ADF so that the short side edge touches the plastic roller.

Cleaning paper

Cleaning paper

Plastic rollers

4 Close the ADF and turn the power on to start the cleaning.

5 Turn the power off.

6 Repeat steps 1 through 5.

pow-on

Cleaning the ADF with Dry cloth with Cleaner F1

1 Lift up the ADF lever to open the ADF.

2 Use a dry cloth or a cloth moistened with Cleaner F1 to softly remove dirt and dust as follows.

Pad

Pad
Wipe the pad in the downward direction (indicated by the arrow). Be careful not to hook the pick spring when wiping.

CLEANING

Glass
Wipe the glass lightly.

N O T E

If the glass is dirty, the image may include vertical stripes.

Glass

Pick roller

Wipe the roller.
Be careful not to damage the surface of the roller and the mylar strip above the Pick roller.
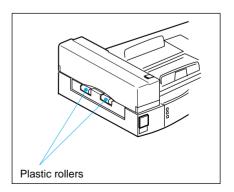
Pick roller

Feed rollers and Plastic rollers

Wipe the rollers.
Be careful not to damage the surface of the rollers.

Feed rollers   Plastic rollers

Plastic rollers

Sheet guide (white part)

Sheet guide (white part)

Wipe the sheet guide.

N O T E
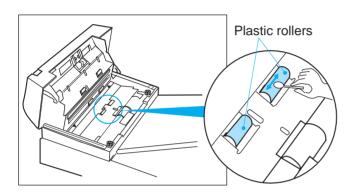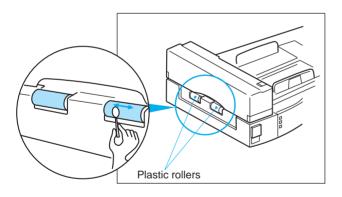
If the sheet guide is dirty, the front image may include vertical stripes.

3 Close the ADF to lock the ADF lever.

Cleaning the Plastic rollers with Cleaner F2

Plastic rollers

Plastic rollers

1 Lift up the ADF lever to open the ADF.
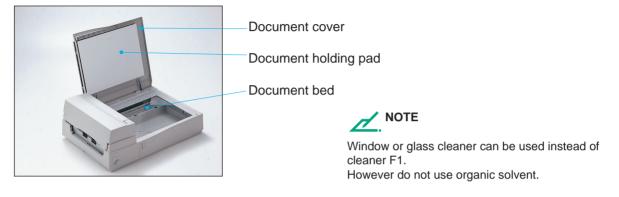
2 Moisten a cotton swab with Cleaner F2.

3 Wipe the Plastic roller surfaces.

4 Wipe the Plastic roller surface with clean and dry cloth. Allow to dry.

Cleaning the Flatbed

Cleaning the Flatbed with Dry cloth with Cleaner F1

Document cover

Document holding pad

Document bed

NOTE

Window or glass cleaner can be used instead of cleaner F1.
However do not use organic solvent.

1 Open the Document cover.

2 Apply Cleaner F1 to a clean cloth.

3 Wipe the document holding pad and document bed.

4 Allow to dry.

N O T E
Be sure to prevent liquid from seeping through the opening between the document bed and the plastic cover.

4
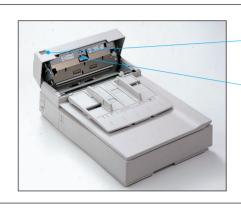
REPLACEMENT OF PARTS

This chapter describes how to replace the pad ASY, pad and pick roller.

Pad ASY or Pad

Pick Roller

Pad ASY or Pad

ADF lever

Pad ASY (PA02201-0020)

✎ N O T E
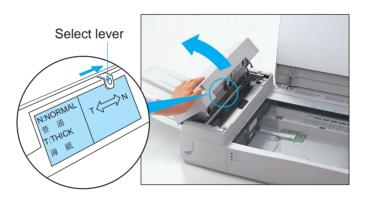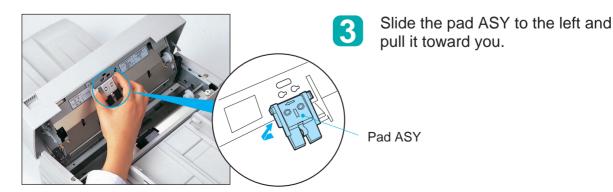
The life span of the pad ASY is about 100,000 sheets or one year.

The life span may be decreased by half when carbon-less sheets are used.

1 Lift up the ADF lever to open the ADF.

2 Slide the paper select lever to "N".

Select lever

N:NORMAL 普 通
T:THICK 薄 紙

T ⟷ N

3 Slide the pad ASY to the left and pull it toward you.

Pad ASY
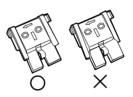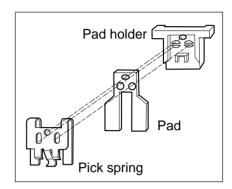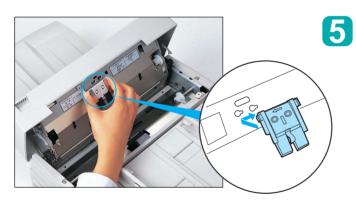
4 If the Pad is attached to the scanner, you can replace the Pad according to the following procedure.

a)Remove the pick spring.
b)Remove the pad from the pad holder.
c)Attach a new pad to the pad holder and fix it with the pick spring.

N O T E

- Turn the pad upside down so that the pad holder pin fits with the pad hole.
- Do not alter the shape of the pick spring.
- Attach the pick spring so that both ends of the pick spring are located on the pad.

Pad holder

Pad

Pick spring

5 Attach the pad ASY to the ADF until it clicks in the reverse sequence of step 3.

NOTE

Fit the pad ASY pin with the larger hole then slide to the right.

6 Close the ADF.

N O T E

Normally, set the select lever to "N". Return the select lever if necessary.

Pick Roller

Pick roller (PA02212-K001)

NOTE
The life span of the pick roller is about 200,000 sheets or one year.
The life span may be decreased by half when carbon-less sheets are used.
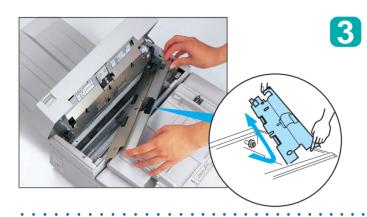
. . . .

1 Lift up the ADF lever to open the ADF.

2 Remove the two thumb screws.
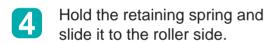
NOTE
Use a Phillips screwdriver when they are tight.
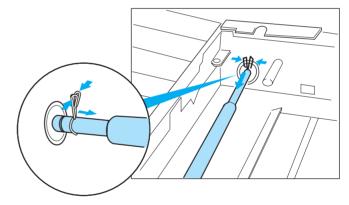
3 Lift up the Guide A with both of your hands and disengage the tip from the right hole.
Then lift the right side of the cover and remove it.

4 Hold the retaining spring and slide it to the roller side.
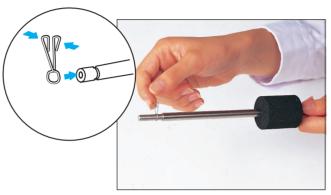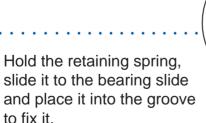
5 Slide the pick roller to the retaining spring side until the axis of the opposite side is disengaged.
Lift and remove it.

6 Remove the retaining spring.
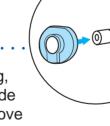
7 Attach the retaining spring to a new roller.
Do not put the spring in the groove yet. Slide the spring next to the larger diameter portion of the shaft.

8 Slide the end of the new pick roller with the retaining spring into the bearing, then into the hole closer to the front of the scanner. Next, slide the opposite end of the pick roller into the bearing next to the gears.

9 Hold the retaining spring, slide it to the bearing slide and place it into the groove to fix it.

10 Attach the Guide A in the reverse sequence of step 3 and align the screw hole.

11 Tighten the thumb screws.

12 Close the ADF unit.

Thumb screws

5

TROUBLESHOOTING

This chapter describes the paper JAM, initial checks and test mode for maintenance.
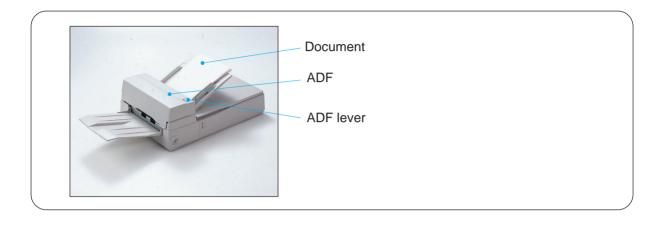
Paper JAM

Initial Checks

Test Mode for Maintenance

Problem Checklist

Paper JAM

Document
ADF
ADF lever

. . . .

1 Remove the documents from the ADF paper chute.

2 Lift the ADF lever to open the ADF.

3 Remove the jammed document.

✎ **NOTE**
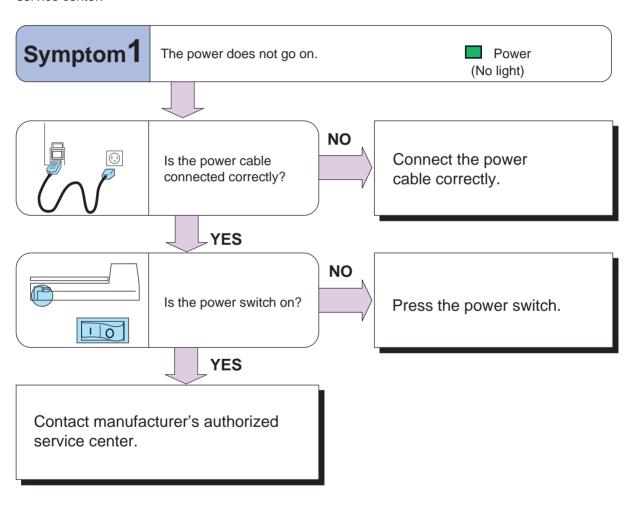
Inspect the paper and paper path. Make sure no staples, paper clips or other materials caused the jam. All types of staples and paper clips should be removed from all documents bofore scanning.
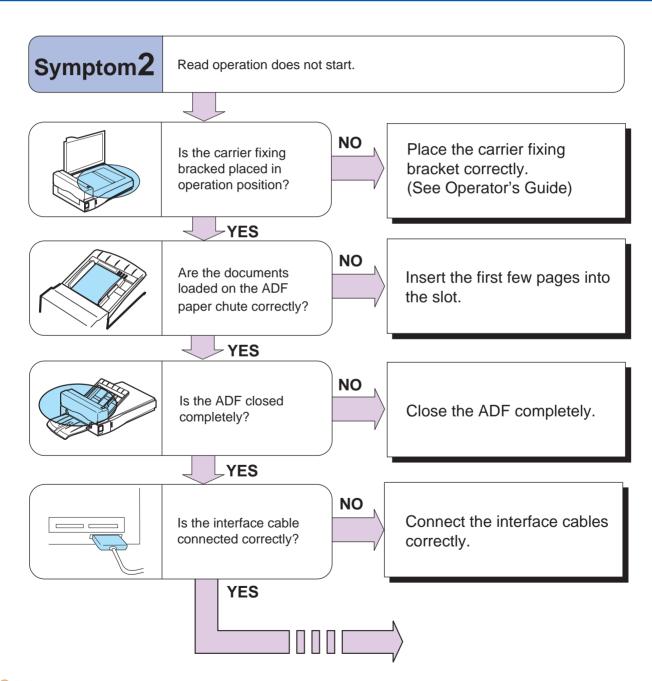
4 Close the ADF until the ADF lever locks.
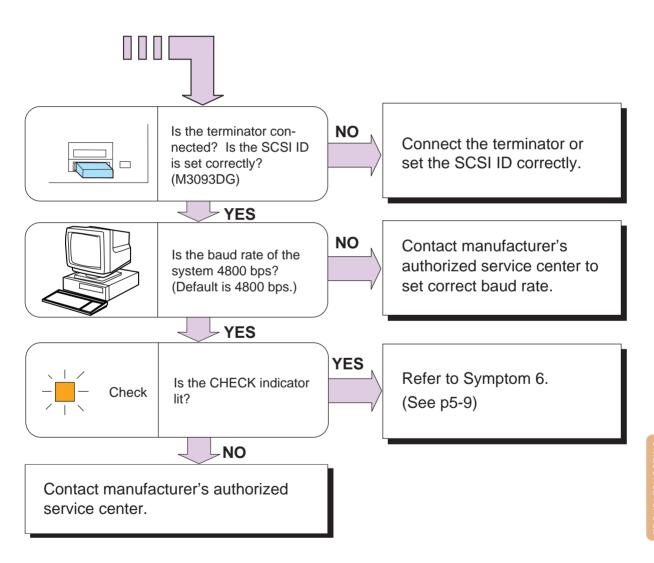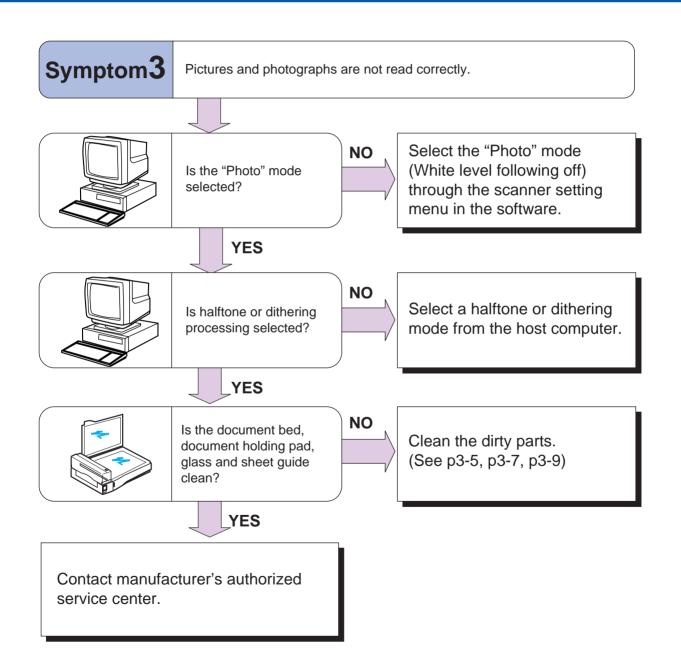
Initial Checks
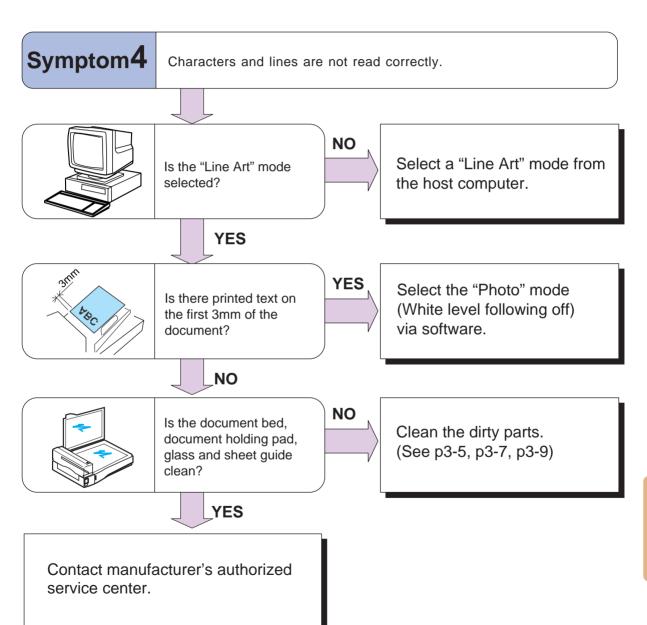
If a problem occurs, check the following items before contacting manufacturer's authorized service center.

Symptom 1   The power does not go on.   ■ Power (No light)

Is the power cable connected correctly? — **NO** → Connect the power cable correctly.

↓ **YES**

Is the power switch on? — **NO** → Press the power switch.

↓ **YES**

Contact manufacturer's authorized service center.

| **Symptom2** | Read operation does not start. |

Is the carrier fixing bracked placed in operation position? — **NO** → Place the carrier fixing bracket correctly. (See Operator's Guide)

YES

Are the documents loaded on the ADF paper chute correctly? — **NO** → Insert the first few pages into the slot.

YES

Is the ADF closed completely? — **NO** → Close the ADF completely.

YES

Is the interface cable connected correctly? — **NO** → Connect the interface cables correctly.

YES

Is the terminator connected? Is the SCSI ID is set correctly? (M3093DG)

NO → Connect the terminator or set the SCSI ID correctly.

YES

Is the baud rate of the system 4800 bps? (Default is 4800 bps.)

NO → Contact manufacturer's authorized service center to set correct baud rate.

YES

Check

Is the CHECK indicator lit?

YES → Refer to Symptom 6.

(See p5-9)

NO

Contact manufacturer's authorized service center.

TROUBLESHOOTING

Symptom3 Pictures and photographs are not read correctly.

Is the "Photo" mode selected?

NO → Select the "Photo" mode (White level following off) through the scanner setting menu in the software.

YES

Is halftone or dithering processing selected?

NO → Select a halftone or dithering mode from the host computer.

YES

Is the document bed, document holding pad, glass and sheet guide clean?

NO → Clean the dirty parts. (See p3-5, p3-7, p3-9)

YES

Contact manufacturer's authorized service center.

| **Symptom4** | Characters and lines are not read correctly. |

Is the "Line Art" mode selected?

NO → Select a "Line Art" mode from the host computer.

YES

3mm

ABC

Is there printed text on the first 3mm of the document?

YES → Select the "Photo" mode (White level following off) via software.

NO

Is the document bed, document holding pad, glass and sheet guide clean?

NO → Clean the dirty parts. (See p3-5, p3-7, p3-9)

YES

Contact manufacturer's authorized service center.

Symptom 5 — Images are distorted or unclear.

Is the document bed, document holding pad, glass and sheet guide clean?

NO → Clean the dirty parts. (See p3-5, p3-7, p3-9)

YES ↓

Is the surface of the ADF pressed or is there anything heavy on it? (During rear read operation with ADF)

YES → Do not press the surface of the ADF or do not put anything heavy on it.

NO ↓

Is the scanner on even and flat surface or any scanner rubber feet missing?

missing

NO → Place the scanner on the even and flat surface. Or attach the rubber feet.

YES ↓

Contact manufacturer's authorized service center.

Symptom6 The check indicator is on. ☐ Check

Is the carrier fixing bracket placed in operation position?

NO →

Place the carrier fixing bracket correctly. (See Operator's Guide)

YES

Check

Turn off the power once and try to turn on the power again. Is the CHECK lamp turned on?

YES

Activate the test mode (p5-17) and inform manufacture's authorized service center of the error status.

Symptom7	"Check" lamp blinks at 4 seconds intervals.	☐ Check

Is the pick roller dirty?

YES → Clean the pick roller.

NO

Are documents under specification?
(See p5-11)

NO → Flatten the curl or use the flatbed to read the document.

YES

Is the Pad ASY dirty or worn out?

YES → Clean or replace the Pad ASY.
(See p3-4, p3-5, p4-2)

NO

Contact manufacturer's authorized service center.

NOTES

- Remove paper clips and staples. Flatten the staple holes.

- Read the following documents using the flatbed.
- Paper with a clip or staple.
- Paper that has ink which is not dry.
- Paper thickness is not constant, such as an envelope.
- Paper that has large rumples or curl.
- Paper that has folds or tears.
- Tracing paper.
- Coating paper.
- Carbon paper.
- Paper that is smaller than A6 size or larger than A4 width.
- Items other than paper, such as clothes, metal sheet, or OHP film.
- Photographic paper.
- Paper that has perforations on its side.
- Paper that has a shape other than square.
- Paper that is very thin.

- Set the paper so that the top of it is curled as shown below.

More than 30mm	Feed direction		More than 30mm	Feed direction
Less than 3mm			Less than 5mm	
Top of the paper	Read surface		Top of the paper	Read surface

- Do not mix different width documents.

Symptom8 Paper double feed occurs frequently.

Does the condition of the document satisfy the requirements on page 5-11.

NO → Flatten the curl or use the flatbed to read the document.

YES

Is the plain paper read with the select lever set to "T"?

N:NORMAL 普 通
T:THICK 薄 紙

YES → Set the select lever to "N". (See p2-3)

NO

Are the documents fanned and angled before loading on the ADF paper chute?

NO → Fan and angle the documents before loading according to the procedure on the pages 2-3 and 2-4.

YES

Is the paper printed by copier or laser printer recentry?

YES → Fan 3 or 4 times to remove the static charge applied on paper.

NO

Is the height of document less than 0.16" (4mm)?	**NO** →	Reduce the document from ADF paper chute. (See p2-6)
↓ **YES**		
Is the pad dirty?	**YES** →	Clean the pad. (See p3-4,p3-5)
↓ **NO**		
Is the pad worn out?	**YES** →	Replace the pad. (See p4-2)
↓ **NO**		

Contact manufacturer's authorized service center.

Symptom 9 Miss pick occurs frequently.

Does the condition of the document satisfy the requirements on page 5-11.

NO → Flatten the curl or use the flatbed to read the document.

YES

Is the heavy paper read with the select lever set to "N"?

N:NORMAL 普通
T:THICK 薄紙
T ⟷ N

YES → Set the select lever to "T". (See p2-3)

NO

Are the documents fanned and angled before loading on the ADF paper chute?

NO → Fan and angle the documents before loading according to the procedure on the pages 2-3 and 2-4.

YES

Is the Pad ASY installed correctly?

NO → Install it correctly. (See p4-2)

YES

YES → Clean the pick roller.
(See p3-4, p3-6)

Is the pick roller dirty?

NO

Is the pick roller worn out?

YES → Replace the pick roller.
(See p4-4)

NO

Contact manufacturer's authorized service center.

Symptom 10

Paper jam occurs frequently.

Does the condition of the document satisfy the requirements on page 5-11.

YES → Flatten the curl or use the flatbed to read the document.

NO

Is there any foreign particles in the ADF?

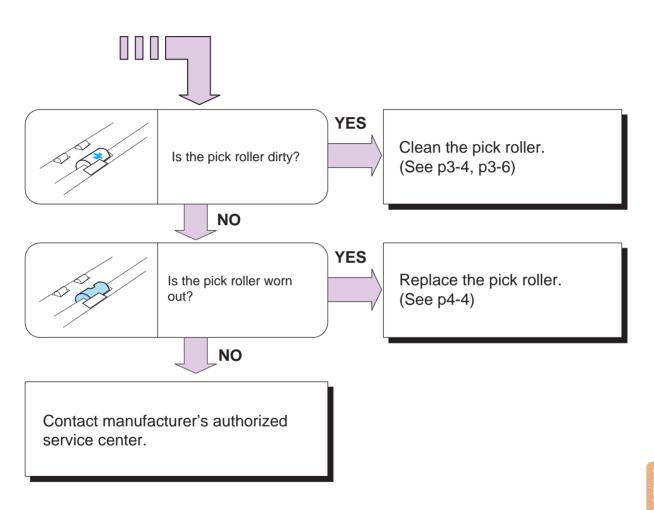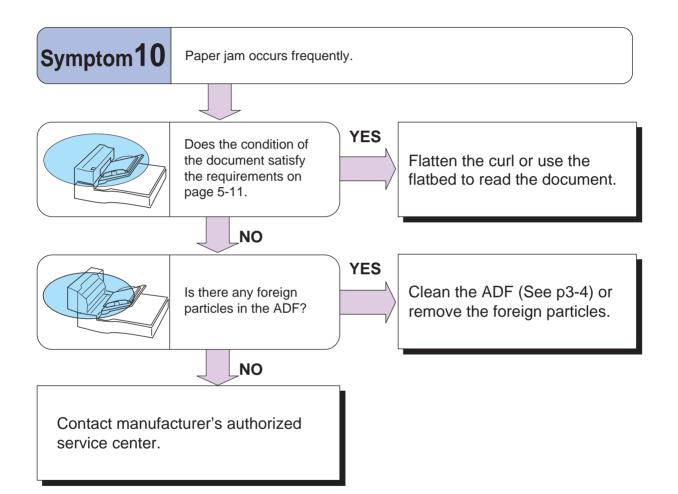**YES** → Clean the ADF (See p3-4) or remove the foreign particles.

NO

Contact manufacturer's authorized service center.
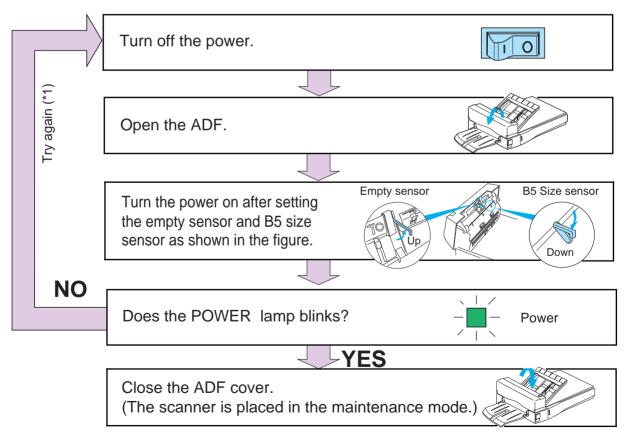
Test Mode for Maintenance

If the CHECK indicator lights up, activate the test mode and inform your sales or support agent or Fujitsu service representative of the error status.

> ⚠️ **CAUTION**
>
> If an operation other than described here is performed, the scanner may malfunction.
> Activate the test mode and follow the procedure only for the error status.

Activating a test mode

Try again (*1)

Turn off the power.	
Open the ADF.	
Turn the power on after setting the empty sensor and B5 size sensor as shown in the figure.	Empty sensor / Up / B5 Size sensor / Down
NO ← Does the POWER lamp blinks?	Power
YES	
Close the ADF cover. (The scanner is placed in the maintenance mode.)	

*1 Do not perform any other operation this time. Immediately turn the power off when the POWER lamp does not blink.

Activating the continuous operation test

Open the ADF and close it again. If no document is loaded on the ADF within five seconds after closing the ADF, the image scanner runs in flatbed mode. If documents are loaded on the ADF within five seconds after closing the ADF, the image scanner continuously feeds the document from ADF. Once the image scanner starts reading documents in flatbed mode, it does not feed documents from ADF even if documents are loaded on the ADF.

Ending the test in flatbed mode

To stop the carrier movement in flatbed mode, open the ADF. If the ADF is opened, the POWER lamp starts blinking immediately after the carrier returns to the home position.

Ending the test in ADF mode

If the ADF hopper is empty, feeding documents from the ADF ends. To restart feeding, open the ADF and close it again. Then load documents on the ADF paper chute within five seconds after closing the ADF.

LED status on error

If an error occurs during the test, the LED indicates as shown in the following table.

LED indicates \ Errors Status	Paper jam	Carrier unit error	Front optical system error	Back optical system error	Motor fuse failure	Lamp fuse failure
🟩 Power	■ On	✳ Blink	✳ Blink	✳ Blink	✳ Blink	✳ Blink
🟩 Read	□ Off	□ Off	□ Off	✳ Blink	■ On	■ On
🟧 Check	✳ Blink	■ On	✳ Blink	■ On	■ On	✳ Blink

N O T E   ✳ Blink   ■ On   □ Off

Problem Checklist

Before contacting the manufacture's authorized service center, please fill in the following items.

▮ General

Model		(Example) M3093DE
Part number		(Example) CA02939-4202
Serial number		(Example) 900002
Manufactured data		(Example) 1996-07
Version	A ~~0 1 2~~ 3 4 5 6 7 8 9 B 0 1 2 3 4 5 6 7 8 9 C 0 1 2 3 4 5 6 7 8 9	The version is printed on the version label located at the left of the rear of the equipment. The version is checked with the double line. This example is for A2 version.
Date of purchase		
Symptoms		
Persistent problem?		
Serviced before (when and how)?		
Error status at test mode. (See p5-18)		

▮ Transport error

Type of document.	
What is your daily usage?	
Date of last cleaning.	
Date of the consumable replacement.	

▮ Image error

Interface controller model	
Software/application name	
Can you send the original and output of sheet by facsimile or by mail?	

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